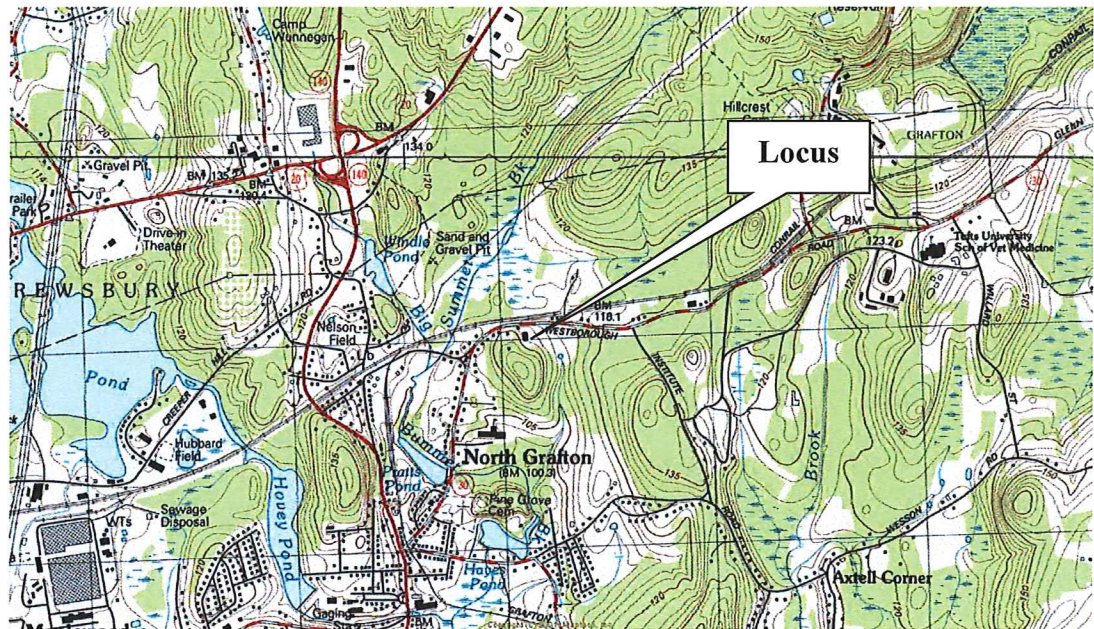


## STORMWATER REPORT

88 Westborough Road  
Grafton, MA

February 15, 2016



### *Prepared for:*

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**WHITMAN & BINGHAM**  
ASSOCIATES  
REGISTERED ENGINEERS & LAND SURVEYORS





# Checklist for Stormwater Report

## A. Introduction

**Important:** When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the [Massachusetts Stormwater Handbook](#). The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.<sup>1</sup> This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8<sup>2</sup>
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

<sup>1</sup> The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

<sup>2</sup> For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.



# Checklist for Stormwater Report

## B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

*Note:* Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

### Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



*B. F. Milisci* 2/15/16  
Signature and Date

## Checklist

**Project Type:** Is the application for new development, redevelopment, or a mix of new and redevelopment?

- ☐ New development
- ☒ Redevelopment
- ☐ Mix of New Development and Redevelopment





# Checklist for Stormwater Report

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## Checklist (continued)

**LID Measures:** Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- ☒ No disturbance to any Wetland Resource Areas
- ☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- ☐ Reduced Impervious Area (Redevelopment Only)
- ☒ Minimizing disturbance to existing trees and shrubs
- ☐ LID Site Design Credit Requested:
  - ☐ Credit 1
  - ☐ Credit 2
  - ☐ Credit 3
- ☐ Use of "country drainage" versus curb and gutter conveyance and pipe
- ☐ Bioretention Cells (includes Rain Gardens)
- ☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- ☐ Treebox Filter
- ☐ Water Quality Swale
- ☐ Grass Channel
- ☐ Green Roof
- ☐ Other (describe): \_\_\_\_\_

## Standard 1: No New Untreated Discharges

- ☒ No new untreated discharges
- ☐ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- ☐ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.





# Checklist for Stormwater Report

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## Checklist (continued)

### Standard 2: Peak Rate Attenuation

- ☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- ☐ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- ☐ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

### Standard 3: Recharge

- ☐ Soil Analysis provided.
- ☐ Required Recharge Volume calculation provided.
- ☐ Required Recharge volume reduced through use of the LID site Design Credits.
- ☐ Sizing the infiltration, BMPs is based on the following method: Check the method used.
  - ☐ Static
  - ☐ Simple Dynamic
  - ☐ Dynamic Field<sup>1</sup>
- ☐ Runoff from all impervious areas at the site discharging to the infiltration BMP.
- ☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- ☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- ☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
  - ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
  - ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
  - ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
  - ☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- ☐ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- ☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

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<sup>1</sup> 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



# Checklist for Stormwater Report

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## Checklist (continued)

### Standard 3: Recharge (continued)

- ☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- ☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

### Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
  - Provisions for storing materials and waste products inside or under cover;
  - Vehicle washing controls;
  - Requirements for routine inspections and maintenance of stormwater BMPs;
  - Spill prevention and response plans;
  - Provisions for maintenance of lawns, gardens, and other landscaped areas;
  - Requirements for storage and use of fertilizers, herbicides, and pesticides;
  - Pet waste management provisions;
  - Provisions for operation and management of septic systems;
  - Provisions for solid waste management;
  - Snow disposal and plowing plans relative to Wetland Resource Areas;
  - Winter Road Salt and/or Sand Use and Storage restrictions;
  - Street sweeping schedules;
  - Provisions for prevention of illicit discharges to the stormwater management system;
  - Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
  - Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
  - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- ☒ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
  - ☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
    - ☐ is within the Zone II or Interim Wellhead Protection Area
    - ☐ is near or to other critical areas
    - ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
    - ☐ involves runoff from land uses with higher potential pollutant loads.
  - ☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.
  - ☒ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.





# Checklist for Stormwater Report

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## Checklist (continued)

### Standard 4: Water Quality (continued)

- ☒ The BMP is sized (and calculations provided) based on:
  - ☒ The ½" or 1" Water Quality Volume or
  - ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- ☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- ☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

### Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

- ☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- ☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted **prior to** the discharge of stormwater to the post-construction stormwater BMPs.
- ☐ The NPDES Multi-Sector General Permit does **not** cover the land use.
- ☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- ☐ All exposure has been eliminated.
- ☐ All exposure has **not** been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- ☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

### Standard 6: Critical Areas

- ☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- ☐ Critical areas and BMPs are identified in the Stormwater Report.



# Checklist for Stormwater Report

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## Checklist (continued)

### Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

- ☒ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
  - ☐ Limited Project
  - ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
  - ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
  - ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
  - ☐ Bike Path and/or Foot Path
  - ☐ Redevelopment Project
  - ☐ Redevelopment portion of mix of new and redevelopment.
- ☐ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
- ☒ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

### Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
  - Construction Period Operation and Maintenance Plan;
  - Names of Persons or Entity Responsible for Plan Compliance;
  - Construction Period Pollution Prevention Measures;
  - Erosion and Sedimentation Control Plan Drawings;
  - Detail drawings and specifications for erosion control BMPs, including sizing calculations;
  - Vegetation Planning;
  - Site Development Plan;
  - Construction Sequencing Plan;
  - Sequencing of Erosion and Sedimentation Controls;
  - Operation and Maintenance of Erosion and Sedimentation Controls;
  - Inspection Schedule;
  - Maintenance Schedule;
  - Inspection and Maintenance Log Form.
- ☐ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.





# Checklist for Stormwater Report

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## Checklist (continued)

### Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

- ☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has **not** been included in the Stormwater Report but will be submitted **before** land disturbance begins.
- ☐ The project is **not** covered by a NPDES Construction General Permit.
- ☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- ☐ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

### Standard 9: Operation and Maintenance Plan

- ☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
  - ☒ Name of the stormwater management system owners;
  - ☒ Party responsible for operation and maintenance;
  - ☒ Schedule for implementation of routine and non-routine maintenance tasks;
  - ☒ Plan showing the location of all stormwater BMPs maintenance access areas;
  - ☐ Description and delineation of public safety features;
  - ☐ Estimated operation and maintenance budget; and
  - ☒ Operation and Maintenance Log Form.
- ☐ The responsible party is **not** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
  - ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
  - ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

### Standard 10: Prohibition of Illicit Discharges

- ☐ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- ☒ An Illicit Discharge Compliance Statement is attached;
- ☐ NO Illicit Discharge Compliance Statement is attached but will be submitted **prior to** the discharge of any stormwater to post-construction BMPs.

## **PROJECT TYPE**

The proposed project includes the demolition of a portion of an existing building (2,023± square feet) and the construction of a 6,375± square foot building addition located at 88 Westborough road in North Grafton, MA. The building addition is being proposed such that a treatment system for the wash water utilized in the existing trailer wash process can be retro-fitted to the existing process.

## **LID MEASURES**

The proposed project was designed to minimize disturbance to the adjacent wetland resources area. The existing building and proposed building addition are outside the 100-foot buffer zone and the proposed project does not alter any wetland resource area. Additionally, the project, as proposed, does not propose any additional impervious area to the subject site.

### **STANDARD 1: No New Untreated Discharges**

The project does not include any new untreated discharges.

The proposed project includes the installation of a water quality unit (WQU) that will treat the stormwater runoff from the existing building, building addition, and portion of the existing paved parking area(s). The new WQU will be connected into existing drainage outfalls.

### **STANDARD 2: Peak Rate Attenuation**

The proposed project does not include any new impervious areas. Also, the existing drainage patterns on the existing site will not be altered. Therefore, the stormwater runoff from the pre-development condition will remain identical in the post-development condition.

### **STANDARD 3: Recharge**

Due to the fact that no additional impervious area is being proposed as part of the project, recharge of stormwater runoff will remain identical from the pre-development condition to the post-development condition.

### **STANDARD 4: Water Quality**

The project does not include any new untreated discharges. Stormwater runoff from the existing building, proposed building addition and a portion of the existing paved parking area(s) are proposed to be directed to a newly installed water quality unit, thus increasing the quality of the stormwater runoff.

A new double grate catch basin with a deep sump and an oil/gas outlet protection device will collect the stormwater from the existing impervious areas of the site. The double grate catch basin will then be connected to an ADS Model 6020 water quality unit for further treatment. The deep-sump catch basin coupled with the WQU will assure removal of greater than 80% of total suspended solids (TSS).



See Standard 9 for information in regards to Long Term Pollution Prevention Plan and Operation & Maintenance (O&M) of the proposed stormwater network.

**STANDARD 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)**

Not Applicable. The project does not contain Land Uses With Higher Potential Pollutant Loads (LUHPPLs).

**STANDARD 6: Critical Areas**

Not Applicable. The project does not discharge stormwater near or to a critical area.

**STANDARD 7: Redevelopments and Other Projects Subject to the Standards only the max. practicable**

The proposed project can be viewed as a redevelopment project. The impervious areas within the subject site are existing and the project does not include an increase in the impervious area. Also, because there is no additional impervious areas proposed as part of the project, there is no increase in the proximity of the impervious areas to the jurisdictional wetland edge.

As a redevelopment project, the applicant is allowed to meet the stormwater standards “to the extent practicable”. However, it the opinion of the designer that the standards have been met in their entirety.

**STANDARD 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control**

Erosion control measures are shown on the attached plan. If required, the project will be covered by a NPDES Construction General Permit and the SWPPP will be submitted prior to land disturbance.

**STANDARD 9: Operation and Maintenance Plan**

This project is a privately owned commercial/industrial development. Upon completion of the project, the property owner / business owner will be responsible for the maintenance and operation of the stormwater management system.

As presented within the description of the proposed stormwater management system, several management practices have been instituted to collect, mitigate and treat stormwater runoff from the proposed development. These include the following:

- Catch basins with associated sumps to collect heavy deposits of sand and silt prior to discharge to the collection system.
- All catch basins within the proposed development contain inverted outlets to trap floating materials.
- Water quality units to remove sediment, gasoline and oil from stormwater.

All of the above items reflect mitigation measures to improve and maintain stormwater quality that will discharge into the abutting jurisdictional wetland system. In order to assure proper operation of the

stormwater facilities in the future, it is necessary for a stormwater maintenance program be instituted and followed.

The owner of the property will be the owner of the storm water system described herein and responsible for the required maintenance and operation of the storm water. The proposed maintenance procedures and scheduling is as follows:

### **CONSTRUCTION COMPLETION MAINTENANCE**

Once construction of the project is completed, proper stabilization of all slopes within the subject site is critical. Hay mulch, geotextile fabric, and hydroseeding are required to prevent unnecessary sediment transport to the drainage system.

### **CATCHBASIN MAINTENANCE**

At least four (4) times a year, all catch basins are to be inspected for overall performance. The catch basin grate should be cleaned of all organic debris that may have been deposited. Within the catch basin sump, the available volume below the outlet invert is to be evaluated. Sand and accumulated organic matter should be removed if more than 50% of the total sump volume has been filled. At a minimum, catch basin sumps should be cleaned on a bi-annual basis.

If evidence of petroleum is found to be present within the sump water or sediment, action must be taken to collect and dispose of the impacted materials at an approved waste facility. Upon the cleaning of the catch basin, the structural integrity and proper operation of the inverted outlet is to be evaluated. Replacement of deteriorated pipes or bricks, repair of cracks in the basin wall, or other required work shall be completed as necessary.

### **ADS WATER QUALITY UNIT MAINTENANCE**

The units should be inspected at quarterly intervals for overall performance. (See attached guide by ADS)

### **SOURCE CONTROLS**

In the event of a spill of petroleum products or hazardous substances, certain measures must be taken and include the following:

- A spill control and containment kit (containing, for example, absorbent materials, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, first aid equipment) should be readily available.
- All spills shall be cleaned up immediately after discovery.
- All measures must be taken to contain and abate the spill and to prevent the discharge of the Hazardous Substance or Oil to storm water or off-site. (The spill area must be kept well



ventilated and personnel must wear appropriate protective clothing to prevent injury from contact with the Hazardous Substances.)

- The owner should be familiar with the spill reporting requirements of the Massachusetts Contingency Plan (310 CMR 40.0000).

#### **Contact Numbers:**

**Grafton Fire Department** –                      Emergency - 911  
   Office – 508-839-4606

**MADEP Emergency Response** - 1-888-304-1133

#### **SNOW & ICE MANAGEMENT**

- Snow should be stored in areas of the site such that any snowmelt is directed and captured by the drainage system. At no time shall snow be discharged and/or stored on the wetland side of the guard rail.
- Avoid disposing of snow on top of storm drain catch basins or in stormwater drainage swales or ditches. Snow combined with sand and debris may block a storm drainage system, causing localized flooding. A high volume of sand, sediment, and litter released from melting snow also may be quickly transported through the system into surface water.
- Sand shall be the primary de-icing agent.
- After spring snow melt has occurred, snow storage areas should be cleaned of all trash, debris and accumulated sands.

#### **STORMWATER MAINTENANCE PLAN DATA SHEETS**

Enclosed within the Stormwater Maintenance Plan, is a “member roster” to clearly establish the individuals responsible for the stormwater system maintenance. Additionally, a stormwater system inspection form has been included as an example of a method to document the required inspection and maintenance of the stormwater system.

An operation and maintenance log should be maintained for the last three years. This should include inspections, repairs, replacement and disposal. For disposal, the log shall indicate the type of material and the disposal location.

**Whitman & Bingham Associates, LLC**  
***Registered Engineers and Land Surveyors***

***Stormwater Maintenance Plan***  
***Member Roster***

**Completed By:** \_\_\_\_\_ **Title:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Director:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Office Phone:** \_\_\_\_\_

**Responsibilities:** \_\_\_\_\_

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**Member:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Office Phone:** \_\_\_\_\_

**Responsibilities:** \_\_\_\_\_

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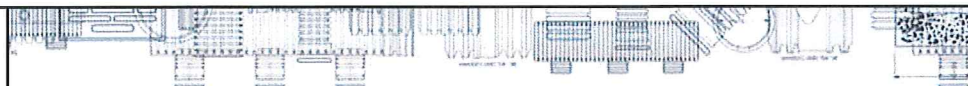
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**STANDARD 10: Prohibition of Illicit Discharges**

There will not be any illicit discharges into the Town of Grafton's drainage system.



# INSTALLATION GUIDE

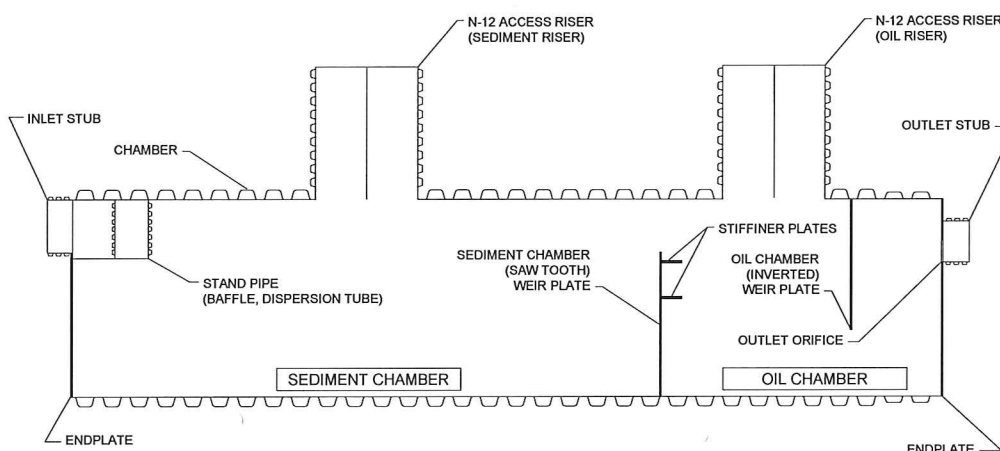
Storm Water Quality Units – Inspection & Maintenance

IG 2.02  
October 2008

## Description / Basic Function

The ADS Water Quality Unit harnesses the proven concepts utilized in municipal sewage treatment systems and transforms it into a compact Water Quality Unit.

The unit is ideal for storm water applications including gas stations and fast food restaurants; this system gives you a highly effective BMP solution to meet EPA requirements.



### Risers

The ADS Water Quality Unit consists of two risers. A 24" riser is centered over Sediment and Oil Chambers. These two risers provide access to the individual chambers of the Storm Water Quality Unit for maintenance and inspection. Entry into the WQU should be considered an OSHA confined space and appropriate guidelines should be followed.

## Maintenance Overview

The purpose of maintaining a clean and obstruction free Water Quality Unit is to ensure the system performs its intended function. A build up of debris in excess of the design storage volume could reduce the efficiency of the system.

A company specializing in such activities should perform inspection and maintenance of the Water Quality Unit.

### Inspection / Maintenance Frequency for the ADS Water Quality Unit

- Inspected quarterly (4 times a year) and after major storm events.
- Cleaned (pumped and pressure washed) a minimum of once a calendar year
- Site or surrounding site conditions may require more inspections and maintenance



## Inspection

An inspection should be performed when the system is installed. This allows the owner to measure the invert prior to accumulation of sediment. This survey will allow the monitoring of sediment build-up without entering the system, thereby eliminating the need for confined space entry. Documentation of pre-inspection data should be captured.

### Procedures

1. In the By-Pass Structure inspect for blockage. Inspect the diversion structure and weir for damage and sediment buildup. Any damage should be repaired and sediment should be removed as required.
2. On the Water Quality Unit, locate the risers. The risers will be 24" in diameter.
3. Remove the lid of each riser. It is recommended that this be done one at a time so an open riser is not left exposed during inspection or maintenance of the other risers.
4. In the 24" riser over the Sediment Chamber, inspect the amount of floatable debris. Then measure the sediment buildup with a measuring device such as a Sludge Judge®. Also inspect that the inlet pipe does not have any blockage. Blockage inspection is better suited after unit is vacuumed. Any confined space entry would be done through this riser and OSHA requirements must be followed.
5. In the 24" riser over the Oil Chamber, measure / inspect the oil depth.
6. Inspect structure and components for any damage.
7. Replace all riser lids.

## Maintenance

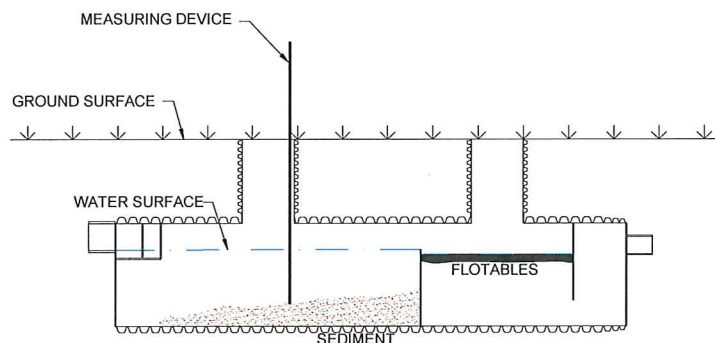
Cleaning should be performed if **sediment volume has reduced the storage area by 20% or if the depth of sediment has reached approximately 25% of the diameter of the structure (See Table 1 for cleanout depth information)**. Furthermore, the system may need cleaning in the event a spill of a foreign substance enters the unit.

### Inspection Procedures (Measuring Sediment Depth)

1. Lower measuring device into sediment riser of unit.
2. Read measurement at ground surface.
3. Subtract the current measurement reading from the distance between the ground surface to the invert of the SWQU (obtained when unit was first installed or is clean).
4. Compare calculated difference to the respective value in Table 1. If resulting value is equal to or greater than the respective value on the Table 1, maintenance shall be performed. The figure below illustrates the inspection procedure.

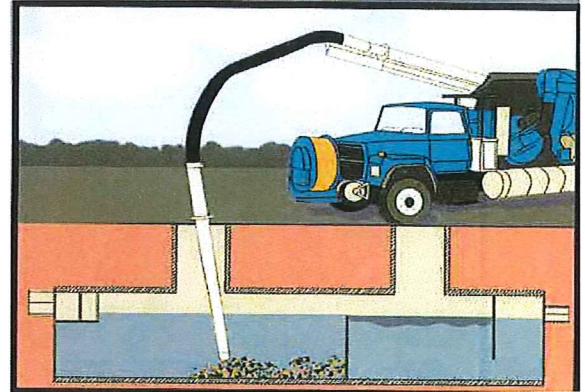
**Table 1**  
**Sediment Depth at Cleanout**

Model Number	Diameter (in)	Sediment Depth (in)
3620WQ	36	9
3640WQ	36	9
4220WQ	42	10
4240WQ	42	10
4820WQ	48	12
4840WQ	48	12
6020WQ	60	15
6040WQ	60	15



## Cleaning Procedures

1. Insert vacuum hose into By-Pass Structure and pump out. Inspect By-Pass Structure for any damage.
2. Insert vacuum hose into 24" riser and pump out the Sediment Chamber. Pressure wash this Chamber if needed. Inspect for any damage. Inspect the inlet pipe for any blockage. Also inspect weir plate for damage.
3. Insert vacuum hose into other 24" riser. This will pump out the Oil Chamber. Inspect for any structural damage. Pressure wash this Chamber if needed.
4. Refill water quality unit with water.
5. Replace all riser lids.



The owner or operator is responsible for meeting all federal, state, and local laws and regulations during the maintenance and cleanout operations.

## Material Disposal

Owners are responsible for complying with all federal, state, and local regulations when disposing of material collected from the storm water quality unit. Water and sediment from cleanout procedures should not be dumped into sanitary sewer.